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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,198	09/26/2003	Michael Douglass	47303-P002US	8961

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WINSTEAD PC
P.O. BOX 50784
DALLAS, TX 75201

EXAMINER	
SINKANTARAKORN, PAWARIS	
ART UNIT	PAPER NUMBER
2616	
MAIL DATE	DELIVERY MODE
07/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/672,198	DOUGLASS ET AL.	
	Examiner	Art Unit	
	PAO SINKANTARAKORN	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *29-32* is/are allowed.

6)☒ Claim(s) *1-11,13-15 and 17-28* is/are rejected.

7)☒ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/17/2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

3. Claims 1-11 and 13-32 are currently pending in the application. Claim 12 has been cancelled.

Claim Objections

4. Claim 28 is objected to because of the following informalities:

Regarding claim 28 line 2, the word 'is' should be inserted after protocol.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 5-6, 10-11, 20, and 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Na et al. (Newly Cited US 2003/0069993) in view of Tingley et al. (US 2002/0138628).

Regarding claims 1 and 20, Na et al. disclose a system configured to function as a layer 4 switch, the system comprising:

a first server configured to be in communication with a port (see Figure 2 reference numeral 200 a host and paragraph 5, wherein the host is in communication with other devices in the network);

wherein the first server has a real IP address and a real MAC address (see paragraphs 50-51 and Table 1, actual IP address and actual MAC address);

wherein the virtual MAC address is different from the real MAC address of the first server (see Table 1);

wherein the virtual IP address is different from the real IP address of the first server (see Table 1);

wherein the first server is configured to provide the virtual MAC address responsive to an ARP request for the virtual IP address (see paragraphs 55-57);

wherein the first server is configured to provide its real MAC address responsive to an ARP request for its real IP address (see paragraphs 55-57, ARP processor is located in the host/server).

Na et al. fail to disclose a system comprising: a layer 2 switch having a plurality of ports; a second server configured to be in communication with a second one of the plurality of ports; wherein the first server and the second server share a virtual IP address.

Tingley et al. from the same or similar fields of endeavor disclose a system comprising:

a layer 2 switch having a plurality of ports (see Figure 3 reference numeral 66, bridge or switch having 3 ports for connecting to 3 virtual networks A-C);

a second server configured to be in communication with a second one of the plurality of ports (see Figure reference numeral 76);

wherein the first server and the second server share a virtual IP address (see paragraphs 37-38).

Thus, it would have been obvious to the person of ordinary skill in the art to implement a system comprising: a layer 2 switch having a plurality of ports; a second server configured to be in communication with a second one of the plurality of ports; wherein the first server and the second server share a virtual IP address as taught by Tingley et al. into the system of Na et al. in order to provide connection redundancy in case of network failure.

Na et al. in view of Tingley et al. fail to disclose a system, wherein a third port is configured to be in communication with a client; wherein the first server and the second server share a virtual MAC address. However, it is well known in the art at the time of the invention to implement a system, wherein a third port is configured to be in communication with a client; wherein the first server and the second server share a virtual MAC address.

Thus, it would have been obvious to the person of ordinary skill in the art to implement a system, wherein a third port is configured to be in communication with a client; wherein the first server and the second server share a virtual MAC address into

the system of Na et al. in view of Tingley et al. in order to provide an interface to communicate with a client.

Regarding claims 2 and 24, Tingley et al. disclose a system, wherein the layer 2 switch is an Ethernet switch and the layer 2 protocol Ethernet (see Figure 3 reference numeral 66, bridge is a layer-2 network component;

regarding claims 3 and 23, Na et al. disclose a system, further comprising an IP layer, a TCP layer, and an Ethernet layer are configured to operate in accordance with layer 4 switching protocol (see paragraph 2, TCP layer is layer 4);

regarding claims 5 and 6, Tingley et al. disclose a system, wherein each of the first server and the second server transmits data with its real MAC address via the layer-2 switch to a client or client server and neither the first server nor the second server transmits data with the shared virtual MAC address via the layer-2 switch to a client or client server (see paragraph 51, Ethernet address);

regarding claim 10, Na et al. disclose a system, further comprising at least one server(s), wherein each one of the at least one server(s) is configured to be in communication with a different port of the plurality of ports (see Figure 2 Ethernet driver (NIC));

regarding claim 11, each of the at least one server(s) is configured to function with the first server, the second server and the layer 2 switch as a layer 4 switch (see paragraph 2).

9. Claims 4, 7-9, 13-15, 17-19, 21-22, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Na et al. in view of Tingley et al. as applied to claims 1 and 20 above, and further in view of Miloushev et al. (US 2002/0120763).

Regarding claims 4, 7-9, 13-15, 21, and 25-26, Na et al. in view of Tingley et al. disclose all the subject matter of the claimed invention except the system, wherein only one of the first server and the second server can be an active server for accepting new connections from the client, wherein at least one of the first server and the second server is a passive server such that the passive server drops all inbound packets having the virtual IP address with a SYN flag set and the passive server continues to process a previously established session and does not establish a new sessions.

Miloushev et al. from the same or similar fields of endeavor disclose the system, wherein only one of the first server and the second server can be an active server for accepting new connections from the client, wherein at least one of the first server and the second server is a passive server such that the passive server drops all inbound packets having the virtual IP address with a SYN flag set and the passive server continues to process a previously established session and does not establish a new sessions (see paragraphs 191, 192, and 198, only one server is in the active state at any given time, wherein new files are created on that server).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the system, wherein only one of the first server and the second server can be an active server for accepting new connections from the client, wherein at least one of the first server and the second server is a passive server

such that the passive server drops all inbound packets having the virtual IP address with a SYN flag set and the passive server continues to process a previously established session and does not establish a new sessions as taught by Miloushev et al. into the system of Na et al. in view of Tingley et al. in order to provide connection redundancy.

Regarding claim 28, Tingley et al. disclose a system, wherein the layer 2 switch is an Ethernet switch and the layer 2 protocol Ethernet (see Figure 3 reference numeral 66, bridge is a layer-2 network component;

regarding claim 27, Na et al. disclose a system, further comprising an IP layer, a TCP layer, and an Ethernet layer are configured to operate in accordance with layer 4 switching protocol (see paragraph 2, TCP layer is layer 4).

Regarding claims 17-19 and 22, Na et al. in view of Tingley et al. disclose all the subject matter of the claimed invention except the system, wherein the first server, the second server, and the at least one server(s) are configured to: determine which server should be the active server and communicate with each other via the layer 2 switch in order to determine which server should be the active server, wherein the determination of which switch should be the active switch is based on a comparison of a metric associated with each server.

Miloushev et al. from the same or similar fields of endeavor disclose the system, wherein the first server, the second server, and the at least one server(s) are configured to: determine which server should be the active server and communicate with each other via the layer 2 switch in order to determine which server should be the active

server (see paragraphs 191-192 and 198), wherein the determination of which switch should be the active switch is based on a comparison of a metric associated with each server (see paragraphs 191-192 and 198, another server is moved to the active state when the active server fills up within 10% capacity).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the claimed invention to implement the system, wherein the first server, the second server, and the at least one server(s) are configured to: determine which server should be the active server and communicate with each other via the layer 2 switch in order to determine which server should be the active server, wherein the determination of which switch should be the active switch is based on a comparison of a metric associated with each server as taught by Miloushev et al. into the system of Na et al. in view of Tingley et al. in order to avoid data loss from server overloading.

Allowable Subject Matter

10. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 29-32 are allowed.

12. The following is an examiner's statement of reasons for allowance:

The closest reference, Na et al., teach a system comprising an ARP processor for receiving an ARP Request of the actual IP and sending an ARP Reply including the

actual MAC and for receiving an ARP Request of the virtual IP and sending an ARP Reply including the virtual MAC (see paragraph 56).

Another closest reference, Tingley et al., teach a system for supporting translation of virtual IP addresses to Ethernet/MAC addresses (see abstract).

However, regarding claim 29, Na et al. and Tingley et al., alone or in combination, fail to teach the claimed features of:

responsive to receiving the shared virtual MAC address by the layer 2 switch, the layer 2 switch fails to associate an actual MAC address of the plurality of servers with at least one port of the plurality of ports causing the layer 2 switch to broadcast data destined for the virtual IP address to each server of the plurality of servers.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

13. **Examiner's Note**: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed

invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAO SINKANTARAKORN whose telephone number is (571)270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pao Sinkantarakorn/
Examiner, Art Unit 2616

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2616

PS